

RECEIVED
CENTRAL FAX CENTER

004

OCT 05 2007

Application No.: 10/751,328

2

Docket No.: 590282001100

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (canceled)

Claim 2 (currently amended): The method of claim 19 35, wherein generating a plurality of cutout particles comprises:

the depth map including a plurality of entries that each indicate a distance to a nearest geometric object from a camera position in a particular direction; and

generating cutout particles from at least some of the entries in the depth map, each cutout particle corresponding to an entry in the depth map in three-dimensional space.

Claim 3 (currently amended): The method of claim 2, wherein the cutout particles are generated at a higher resolution than ~~the a~~ particle image.

Claim 4 (previously presented): The method of claim 2, wherein the cutout particles are generated at a higher resolution than the particle image along silhouette edges of the depth map.

Claim 5-13 (canceled)

Claim 14 (amended): The method of claim 13 19, ~~wherein the rendering the particle systems with the cutout particles comprises further comprising:~~

computing a depth of field adjustment for a particle.

Claim 15 (amended): The method of claim 13 19, ~~wherein the rendering the particle systems with the cutout particles comprises further comprising:~~

computing a motion blur adjustment for a particle.

Claim 16 (canceled)

pa-1180608

Application No.: 10/751,328

3

Docket No.: 590282001100

Claim 17 (previously presented): The method of claim 19, wherein each list of coverage layers is generated by processing the particles in order from farthest from a camera position to nearest.

Claim 18 (original): The method of claim 17, wherein computing a list of coverage layers for a pixel comprises:

adding a new coverage layer for a particle from a particle system that follows a cutout particle in the processing;

Claim 19 (previously presented): A computer-implemented method to produce a particle image to be combined with a second image for animation, the method comprising:

generating a plurality of cutout particles associated with a three-dimensional position of objects in the second image;

for each of a plurality of pixels in the particle image, computing a list of coverage layers for the pixel, where each coverage layer in the list of coverage layers includes an accumulated color value due to one or more particles of a particle system and an amount occluded by one or more of the cutout particles;

determining the color of the pixels based on their associated coverage layer list; and displaying the composited image on a display;

wherein generating the cutout particles comprises:

computing a depth map for the second image; and

generating a cutout particle for at least some entries in the depth map, each cutout particle having a position and radius in three-dimensional space corresponding to the depth map entry.

Claim 20 (original): The method of claim 19, wherein at least portions of the depth map have a higher resolution than the particle image.

Claim 21 (previously presented): The method of claim 19, wherein the cutout particles are generated at a higher resolution than the particle image.

pa-1180608

Application No.: 10/751,328

4

Docket No.: 590282001100

Claim 22 (previously presented): The method of claim 19, wherein generating a plurality of cutout particles comprises sampling geometric objects in the second image at a higher resolution than the particle image at least in areas where aliasing is likely to occur.

Claim 23 (currently amended): A computer program product comprising a computer-readable medium containing computer program code for performing the method of claim 19.

Claim 24 (currently amended): A system for generating an image, the system carrying out the method of claim 19 based on a scene description that includes one or more geometric objects and one or more particle systems, the system comprising:

a geometry renderer that renders the geometric objects in the scene description to generate a geometric image and a depth map of the geometric objects;

a cutout particle generator that generates a plurality of cutout particles from the depth map, each cutout particle corresponding to one of the geometric objects in the scene description;

a particle renderer operatively coupled to the cutout particle generator that renders the particle systems of the scene description and the cutout particles to generate a particle image, wherein at least some cutout particles occlude particles of the particle systems; and

a compositor operatively coupled to the geometry renderer and particle renderer that combines the geometric image and the particle image to form a composited image.

Claim 25-36 (canceled)

pa-1180608